device according to the above-described embodiments of the present invention. Since the reset transistor Tr**2** is formed at the upper central portion of one sharing unit, the degree of freedom of the layout of the reset transistor Tr**2** can be increased as illustrated in FIG. **2**, FIG. **31**, and FIGS. **58** and **59**.

Although not illustrated in the figure, the above-described characteristic configurations of each embodiment can be combined with each other to form a solid-state imaging device.

In the examples above, the amplification transistor Tr**3** is disposed at the center of the sharing unit **21**, and the reset transistor Tr**2** is disposed on the upper portion of the sharing unit **21**. However, the transistors Tr**2** and Tr**3** may be disposed at reverse positions; that is, the reset transistor Tr**2** may be disposed at the center of the sharing unit **21**, and the amplification transistor Tr**3** may be disposed on the upper portion of the sharing unit **21**. However, the configuration in which the amplification transistor Tr**3** is disposed at the center of the sharing unit **21**, and the reset transistor Tr**2** is disposed on the upper portion thereof is advantageous because the connection wiring does not intersect the readout wirings, and accordingly, the floating capacitance associated with the floating diffusions can be reduced.

In the examples above, one sharing unit includes an array of photodiodes of 8 pixels in total with 2 pixels by 4 pixels, respectively, in horizontal and vertical directions. However, one sharing unit may include an array of photodiodes of 2 pixels by 4n pixels (n is a positive integer), respectively, in horizontal and vertical directions, such as, for example, an array of photodiodes of 12 pixels in total with 2 pixels by 6 pixels, and an array of photodiodes of 16 pixels in total with 2 pixels by 8 pixels.

Embodiment 21

Exemplary Configuration of Solid-State Imaging Device

A solid-state imaging device according to the embodiment of the present invention can be applied to electronic apparatuses such as cameras and camcorders equipped with a solid-state imaging device, or other apparatuses equipped with a solid-state imaging device. In particular, since pixels can be miniaturized, a camera equipped with a small solid-state imaging device can be manufactured.

With reference to FIG. **60**, an embodiment of a camera is illustrated as an example of an electronic apparatus according to the present invention. A camera **91** according to the present embodiment includes an optical system (optical lens) **92**, a solid-state imaging device **93**, and a signal processing circuit **94**. The solid-state imaging device **93** is a solid-state imaging device according to any one of the above-described embodiments. The optical system **92** causes an image light (incident light) from a subject to be focused on an imaging surface of the solid-state imaging device **93**. In this way, signal charges are accumulated for a predetermined period in photodiodes which are photoelectric conversion units of the solid-state imaging device **93**. The signal processing circuit **94** performs various signal processing on the output signals from the solid-state imaging device **93** and outputs processed signals. The camera **91** of the present embodiment may take the form of a camera module in which the optical system **92**, the solid-state imaging device **93**, and the signal processing circuit **94** are integrated.

In the present invention, the configuration of the camera illustrated in FIG. **60** or camera which is represented by mobile phones, for example, and equipped with a camera module may be implemented as a so-called imaging function module that is a module with imaging capabilities in which the optical system **92**, the solid-state imaging device **93**, and the signal processing circuit **94** are integrated. The present invention may be applied to an electronic apparatus which is equipped with such an imaging function module.

According to the electronic apparatus of the present embodiment, even when pixels are miniaturized to realize higher definition, and thus a solid-state imaging device is further miniaturized, since the sensitivity of the solid-state imaging device can be improved, it is possible to provide a high-quality electronic apparatus capable of providing higher image quality and higher resolution.

It should be understood by those skilled in the art that various modifications, combinations, sub-combinations and alterations may occur depending on design requirements and other factors insofar as they are within the scope of the appended claims or the equivalents thereof.

What is claimed is:

1. A solid-state imaging device comprising:

a first structural unit including a first transfer transistor group sharing a first floating diffusion, the first transfer transistor group including four transfer transistors arranged around the first floating diffusion; and

a second structural unit including a second transfer transistor group sharing a second floating diffusion, the second transfer transistor group including four transfer transistors arranged around the second floating diffusion;

wherein the first and second floating diffusions are coupled to each other in a first direction,

wherein the first and second transfer transistor groups share at least an amplification transistor and a reset transistor, the amplification transistor coupled to a select transistor,

wherein a select wiring coupled to a gate electrode of the select transistor extends along the first direction, and

wherein a first power supply wiring coupled to a drain region of the reset transistor extends along a second direction different from the first direction.

2. The solid-state imaging device according to claim **1**, wherein a second power supply wiring coupled to a drain region of the amplification transistor extends along the first direction.

3. The solid-state imaging device according to claim **2**, wherein the first and second power supply wirings are formed in first and second layers respectively.

4. The solid-state imaging device according to claim **2**, wherein each gate electrode of the first and second transfer transistor groups is substantially triangular or trapezoidal in shape.

5. The solid-state imaging device according to claim **3**, wherein a reset wiring coupled to a gate electrode of the reset transistor extends along the second direction.

6. The solid-state imaging device according to claim **5**, wherein each gate electrode of the first and second transfer transistor groups is coupled to a readout wiring extending along the second direction.

7. The solid-state imaging device according to claim **6**, wherein a first connection wiring is coupled to the first floating diffusion, the second floating diffusion, an amplification gate electrode of the amplification transistor, and a source region of the reset transistor.